Annual Review of Phytopathology

Volume 47, 2009

Contents

Look Before You Leap: Memoirs of a "Cell Biological" Plant Pathologist
Michèle C. Heath 1

Plant Disease Diagnostic Capabilities and Networks
Sally A. Miller, Fen D. Beed, and Carrie Lapaire Harmon 15

Diversity, Pathogenicity, and Management of Verticillium Species
Steven J. Klosterman, Zahi K. Atallah, Gary E. Vallad, and Krishna V. Subbarao 39

Bacterial/Fungal Interactions: From Pathogens to Mutualistic Endosymbionts
Donald Y. Kobayashi and Jo Anne Crouch 63

Community Ecology of Fungal Pathogens Causing Wheat Head Blight
Xiangming Xu and Paul Nicholson 83

The Biology of Viroid-Host Interactions
Biao Ding 105

Recent Evolution of Bacterial Pathogens: The Gall-Forming *Pantoea agglomerans* Case
Isaac Barash and Shulamit Manulis-Sasson 133

Fatty Acid–Derived Signals in Plant Defense
Aardra Kachroo and Pradeep Kachroo 153

Salicylic Acid, a Multifaceted Hormone to Combat Disease
A. Corina Vlot, D'Maris Amick Dempsey, and Daniel F. Klessig 177

RNAi and Functional Genomics in Plant Parasitic Nematodes
M.N. Rosso, J.T. Jones, and P. Abad 207

Fungal Effector Proteins
Ioannis Stergiopoulos and Pierre J.G.M. de Wit 233

Durability of Resistance in Tomato and Pepper to Xanthomonads Causing Bacterial Spot
Robert E. Stall, Jeffrey B. Jones, and Gerald V. Minsavage 265

Seed Pathology Progress in Academia and Industry
Gary P. Munkvold 285

Migratory Plant Endoparasitic Nematodes: A Group Rich in Contrasts and Divergence
Maurice Moens and Roland N. Perry 313

The Genomes of Root-Knot Nematodes
David McK. Bird, Valerie M. Williamson, Pierre Abad, James McCarter, Etienne G.J. Danchin, Philippe Castagnone-Sereno, and Charles H. Opperman 333

Viruses of Plant Pathogenic Fungi
Said A. Ghabrial and Nobuhiro Suzuki 353

Hordeivirus Replication, Movement, and Pathogenesis
Andrew O. Jackson, Hyoun-Sub Lim, Jennifer Bragg, Uma Ganesan, and Mi Yeon Lee 385

Ustilago maydis as a Pathogen
Thomas Brefort, Gunther Doehlemann, Artemio Mendoza-Mendoza, Stefanie Reissmann, Armin Djamei, and Regine Kahmann 423

Errata

An online log of corrections to *Annual Review of Phytopathology* articles may be found at http://phyto.annualreviews.org/

Related Articles

From the ***Annual Review of Analytical Chemistry***, Volume 2 (2009)

Nanoparticle PEBBLE Sensors in Live Cells and In Vivo
Yong-Eun Koo Lee, Ron Smith, and Raoul Kopelman

Micro- and Nanocantilever Devices and Systems for Biomolecule Detection
Kyo Seon Hwang, Sang-Myung Lee, Sang Kyung Kim, Jeong Hoon Lee, and Tae Song Kim

Applications of Aptamers as Sensors
Eun Jeong Cho, Joo-Woon Lee, and Andrew D. Ellington

From the ***Annual Review of Biochemistry***, Volume 78 (2009)

The Structural and Functional Diversity of Metabolite-Binding Riboswitches
Adam Roth and Ronald R. Breaker

Sphingosine 1-Phosphate Receptor Signaling
Hugh Rosen, Pedro J. Gonzalez-Cabrera, M. Germana Sanna, and Steven Brown

From the ***Annual Review of Biomedical Engineering***, Volume 11 (2009)

Fluorescent Probes for Live-Cell RNA Detection
Gang Bao, Won Jong Rhee, and Andrew Tsourkas

From the ***Annual Review of Biophysics***, Volume 38 (2009)

Comparative Enzymology and Structural Biology of RNA Self-Cleavage
Martha J. Fedor

From the ***Annual Review of Cell and Developmental Biology***, Volume 24 (2008)

Auxin Receptors and Plant Development: A New Signaling Paradigm
Keithanne Mockaitis and Mark Estelle

Systems Approaches to Identifying Gene Regulatory Networks in Plants
Terri A. Long, Siobhan M. Brady, and Philip N. Benfey

From the ***Annual Review of Ecology, Evolution, and Systematics***, Volume 39 (2008)

Sanctions, Cooperation, and the Stability of Plant-Rhizosphere Mutualisms
E. Toby Kiers and R. Ford Denison

The Performance of the Endangered Species Act
Mark W. Schwartz

Pandora's Box Contained Bait: The Global Problem of Introduced Earthworms
Paul F. Hendrix, Mac A. Callaham, Jr., John Drake, Ching-Yu Huang, Sam W. James, Bruce A. Snyder, and Weixin Zhang

From the ***Annual Review of Entomology***, Volume 54 (2009)

Adaptation and Invasiveness of Western Corn Rootworm: Intensifying Research on a Worsening Pest
Michael E. Gray, Thomas W. Sappington, Nicholas J. Miller, Joachim Moeser, and Martin O. Bohn

Impacts of Plant Symbiotic Fungi on Insect Herbivores: Mutualism in a Multitrophic Context
Sue E. Hartley and Alan C. Gange

Cellular and Molecular Aspects of Rhabdovirus Interactions with Insect and Plant Hosts
El-Desouky Ammar, Chi-Wei Tsai, Anna E. Whitfield, Margaret G. Redinbaugh, and Saskia A. Hogenhout

From the ***Annual Review of Genetics***, Volume 42 (2008)

How *Saccharomyces* Responds to Nutrients
Shadia Zaman, Soyeon Im Lippman, Xin Zhao, and James R. Broach

The Organization of the Bacterial Genome
Eduardo P.C. Rocha

Genomic Insights into Marine Microalgae
Micaela S. Parker, Thomas Mock, and E. Virginia Armbrust

From the ***Annual Review of Genomics and Human Genetics***, Volume 9 (2008)

Phylogenetic Inference Using Whole Genomes
Bruce Rannala and Ziheng Yang

From the ***Annual Review of Microbiology***, Volume 62 (2008)

Evolution of Intracellular Pathogens
Arturo Casadevall

Chlamydiae as Symbionts in Eukaryotes
Matthias Horn

From the ***Annual Review of Pharmacology and Toxicology***, Volume 49 (2009)

Lipid Mediators in Health and Disease: Enzymes and Receptors as Therapeutic Targets for the Regulation of Immunity and Inflammation
Takao Shimizu

From the ***Annual Review of Plant Biology***, Volume 60 (2009)

DNA Transfer from Organelles to the Nucleus: The Idiosyncratic Genetics of Endosymbiosis
Tatjana Kleine, Uwe G. Maier, and Dario Leister

Jasmonate Passes Muster: A Receptor and Targets for the Defense Hormone
John Browse

A Renaissance of Elicitors Perception of Microbe-Associated Molecular Patterns and Danger Signals by Pattern-Recognition Recepts
Thomas Boller and Georg Felix

Biosynthesis of Plant Isoprenoids: Perspectives for Microbial Engineering
James Kirby and Jay D. Keasling

Roles of Plant Small RNAs in Biotic Stress Responses
Virginia Ruiz-Ferrer and Olivier Voinnet